

*West Virginia Department of Environmental Protection  
Division of Air Quality*

# Fact Sheet



*For Final Permitting Action Under 45CSR30 and  
Title V of the Clean Air Act*

Permit Number: **R30-02900001-2006 (Part 3 of 3)**

Application Received: **12/2/1996**

Plant Identification Number: **029-00001**

Permittee: **Mittal Steel USA - Weirton Inc.**

Mailing Address: **400 Three Springs Drive Weirton WV 26062-4989**

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Physical Location: Weirton, Hancock County, West Virginia  
UTM Coordinates: 533.70 km Easting • 4474.50 km Northing • Zone 17  
Directions: State Route 2 to north end of Weirton. Site located on left.

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## Facility Description

Mittal Steel USA - Weirton Inc. operates a steel manufacturing facility that includes a Strip Mill, a Tin Mill, a Hydrochloric Acid Regeneration Plant, and Boilers. The facility also includes the following idled operations: Blast Furnaces, Basic Oxygen Plant, Continuous Caster, and Sheet Mill. Operations at the sheet mill include tempering and hot dip galvanizing. Other operations at the facility include boilers, storage tanks, wastewater treatment plants and support/maintenance shops. For Title V purposes, the facility operations were divided into three parts: Part 1 includes the Boilers, Part 2 includes the Cold operations, and Part 3 includes the Hot operations. This permit covers Part 3 of the facility. Part 3 of the facility is idled, therefore the monitoring, testing, recordkeeping and reporting will not be required until the Hot side operations are restarted.

|                   | Emission Unit IDs  | Descriptions   |
|-------------------|--|--|
| Blast Furnaces    | 026/1, 026/2, 026/3, 026/4, 026/5, 026/7, 026/9, 029/1, 029/2, 029/3, 029/4, 029/5, 029/7, 029/9 | Blast Furnaces, Casthouse, Slips, Flue dust handling, Fume Suppression, Blast Stoves, Flares |
| Material Handling | 026/6, 026/10, 026/11, 026/12, 029/6, 029/10, 029/11, 029/12                                     | Coke Handling, Ore Handling, Material Handling, Slag Granulator                              |
| Basic Oxygen      | 030, 030/1, 030/2, 030/6, 030/21, 030/22   | BOP Vessels, BOP fugitives, Hot metal transfer & desulfurization, CAS-OB Metallurgy          |
| Caster            | 030/5, 030/14, 030/18  | Continuous Caster, Caster Cut-off Torches, Caster Ladle Dryers                               |

## Facility-Wide Emissions Summary

| Plantwide Emissions Summary [Tons per Year]  |                       |
|--|-----------------------|
| Criteria Pollutants  | 2004 Actual Emissions |
| Carbon Monoxide (CO)   | 2479                  |
| Nitrogen Oxides (NO <sub>x</sub> )   | 1184                  |
| Particulate Matter (PM <sub>10</sub> ) <i>PM<sub>10</sub> is a component of TSP.</i> | 1338                  |
| Total Particulate Matter (TSP)   | 2227                  |
| Sulfur Dioxide (SO <sub>2</sub> )  | 1119                  |
| Volatile Organic Compounds (VOC)   | 142                   |
| Hazardous Air Pollutants   | 2004 Actual Emissions |
| Hydrochloric Acid  | 3.326                 |
| Antimony   | 0.051                 |
| Chlorine   | 0.507                 |
| Chromium   | 0.503                 |
| Hexane   | 9.174                 |
| Manganese  | 4.372                 |
| Methanol   | 8.701                 |
| Nickel   | 0.296                 |

*Some of the above HAPs may be counted as PM or VOCs.*

## Title V Program Applicability Basis

Due to this facility's potential to emit over 100 tons per year of all criteria pollutants and over 25 tons per year of aggregate HAPs, Mittal Steel USA - Weirton Inc. is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 45CSR30.

## Legal and Factual Basis for Permit Conditions

The State and Federally-enforceable conditions of the Title V Operating Permits are based upon the requirements of the State of West Virginia Operating Permit Rule 45CSR30 for the purposes of Title V of the Federal Clean Air Act and the underlying applicable requirements in other state and federal rules.

The sources in Part 3 of the Title V Permit have been found to be subject to the following applicable rules:

|                    |                                  |  |
|--------------------|----------------------------------|--|
| Federal and State: | 45CSR6                           | Open burning prohibited.                     |
|                    | 45CSR7                           | PM emission limits for manufacturing sources |
|                    | 45CSR10                          | SO <sub>2</sub> emission limits              |
|                    | 45CSR11                          | Standby plans for emergency episodes.        |
|                    | 45CSR13                          | Construction permits                         |
|                    | 45CSR30                          | Operating permit requirement.                |
|                    | 40 C.F.R. Part 61                | Asbestos inspection and removal              |
|                    | 40 C.F.R. Part 82, Subpart F     | Ozone depleting substances                   |
|                    | 40 C.F.R. Part 60, Subpart Na    | Slag skimming station requirements           |
|                    | 40 C.F.R. Part 63, Subpart FFFFF | Integrated Iron and Steel Manufacturing      |
| State Only:        | 45CSR4                           | No objectionable odors.                      |

Each State and Federally-enforceable condition of the draft Title V Operating Permit references the specific relevant requirements of 45CSR30 or the applicable requirement upon which it is based. Any condition of the draft Title V permit that is enforceable by the State but is not Federally-enforceable is identified in the draft Title V permit as such.

The Secretary's authority to request any pertinent information such as annual emission inventory reporting is provided in WV Code § 22-5-4(a)(14). The Secretary's authority to require standards under 40 C.F.R. Part 60 (NSPS), 40 C.F.R. Part 61 (NESHAPs), and 40 C.F.R. Part 63 (NESHAPs MACT) is provided in West Virginia Code §§ 22-5-1 *et seq.*, 45CSR16, 45CSR15, 45CSR34 and 45CSR30.

### Active Permits/Consent Orders

| Permit or<br>Consent Order Number | Date of<br>Issuance | Permit Determinations or Amendments That<br>Affect the Permit ( <i>if any</i> ) |
|-----------------------------------|---------------------|---|
| R13-0987                          | 8/5/1988            |   |
| R13-1200                          | 5/17/1990           | Corrected 6/21-1990   |
| R13-1433                          | 2/14/1992           |   |
| CO 9-1990                         | 9/12/1990           |   |
| CO 12-1990                        | 12/19/1990          |   |
| CO-SIP-95-2                       | 1/9/1995            | CO-SIP-C-2003-28  |
| CO-SIP-C-2003-28                  | 6/30/2003           |   |

Conditions from this facility's Rule 13 permits governing construction-related specifications and timing requirements will not be included in the Title V Operating Permit but will remain independently enforceable under the applicable Rule 13 permit(s). All other conditions from this facility's Rule 13 permits governing the source's operation and compliance have been incorporated into this Title V permit in accordance with the "General Requirement Comparison Table B," which may be downloaded from DAQ's website.

### Determinations and Justifications

**Blast furnace casthouses** - The blast furnaces and the material handling equipment associated with them are enclosed in casthouses. The casthouses are subject to 45CSR7, Section 3.6.b. (opacity limits), Section 4.10.f. (PM concentration standard), Section 5.1. (fugitive particulate standard), and Section 8 (reporting and testing requirements). The blast furnace casthouses are also subject to 40 CFR part 63, Subpart FFFFF. The following table is a comparison of the limits from Rule 7 and the MACT.

|   |   |
|---|---|
| <b>45CSR§7-3.6.b.:</b> Visible emissions shall not exceed 20% opacity except for a period or periods aggregating no more than 5 minutes in any sixty 60 minute period where the average opacity for the aggregated period shall not exceed 40% opacity. | <b>40CFR§§63.7790(a) &amp; 63.7810:</b> Secondary emissions shall not be discharged to the atmosphere from any opening in the cast-house, or structure housing the blast furnace, that exhibit opacity greater than 20% (6-minute average), except during periods of startup, shutdown, and malfunction as defined in 40 CFR §63.2. |
| <b>45CSR§7-4.10.f.:</b> PM emissions from any blast furnace cast house air pollution control equipment shall not exceed a concentration of 0.020 gr/dscf.   | <b>40 CFR §§63.7790(a) and 63.7810:</b> For each casthouse at an existing blast furnace, gases shall not be discharged to the atmosphere that exit from a control device that contain PM in excess of 0.01 gr/dscf.   |

The visible emissions requirements were not streamlined and both conditions were included in the Title V permit, therefore emissions from the casthouses must not exceed 20% opacity except during periods of

startup, shutdown, and malfunction, and during those periods the opacity must not exceed 40% average opacity for more than 5 minutes in any 60 minute period. The PM concentration standard from 40 CFR § 63.7790(a) is more stringent than the PM concentration standard from 45CSR7-4.10.f., therefore the Rule 7 limit was streamlined with the limit from the MACT. The PM testing requirements shall be in accordance with 45CSR7A which is more stringent than the testing requirements from the MACT. The compliance, monitoring, recordkeeping, reporting, and other testing requirements shall be in accordance with 40 CFR part 63, Subpart FFFFF.

The blast furnace casthouses are subject to 45CSR10, Section 4 (SO<sub>2</sub> concentration limit), Section 5 (H<sub>2</sub>S in process gas limit), and Section 8 (testing, monitoring, reporting and recordkeeping). 45CSR§10-8.2. requires the company to monitor compliance as set forth in an approved monitoring plan which is attached to the permit as Appendix A.

Consent Order, CO-SIP-C-2003-28, required that Blast Furnaces #2 and #3 not be restarted, and limited Blast Furnaces #1 and #4 to 60.1 lbs per hour of SO<sub>2</sub> with compliance demonstrated using emissions calculations. Section VI.6. of the Consent Order required the company to conduct testing to determine an emission factor for SO<sub>2</sub> from the combustion of blast furnace gas. The testing was completed, therefore the requirement to test was not included in the Title V permit. The resulting emission factor of 14.45 lbs of SO<sub>2</sub> per million cubic feet of gas was included in the permit to be used in the calculations.

**Blast Furnace flares** - The Blast Furnace flares are defined as incinerators under 45CSR§6-2.7. and are subject to the opacity and PM emission limits of 45CSR6 and the SO<sub>2</sub> emission limits of 45CSR10. Using the equation in 45CSR§6-4.1 and the flare capacities, the PM emission limit is 477.4 lbs/hr per flare. The blast furnace gas goes through a scrubber, a dust catcher and a cyclone, therefore it is very low in PM. The flares burn any excess blast furnace gas which is not used by the blast furnace stoves or boilers. As a result of these findings and due to the nature of this control device, visible emissions performance tests shall be used to demonstrate compliance with 45CSR6. Compliance with 45CSR10 shall be in accordance with the facility's Rule 10 monitoring plan which is attached to the permit as Appendix A.

Consent Order, CO-SIP-C-2003-28, limited the flares to 42.1 lbs per hour of SO<sub>2</sub> with compliance demonstrated using emissions calculations. Section VI.6. of the Consent Order required the company to conduct testing to determine an emission factor for SO<sub>2</sub> from the combustion of blast furnace gas. The testing was completed in April 2004, therefore the requirement to test was not included in the Title V permit. The resulting emission factor of 14.45 lbs of SO<sub>2</sub> per million cubic feet of gas was included in the permit to be used in the calculations.

**Basic Oxygen Plant** - The Basic Oxygen Plant is subject to the opacity limit of 45CSR7, Section 3.6.a. and the PM limits of Sections 4.10.d. and 4.10.e. The Basic Oxygen Plant is also subject to 40 C.F.R 63, Subpart FFFFF. The following table is a comparison of the limits from Rule 7 and 40 CFR part 63, Subpart FFFFF.

|  |  |
|--|--|
| <b>45CSR§7-3.6.a.:</b> Visible emissions from a basic oxygen process roof monitor shall not exceed 20% opacity except for a period or periods aggregating no more than 3 minutes in any 60 minute period where the average opacity for the aggregated period shall not exceed 40% opacity. | <b>40CFR§§63.7790(a) &amp; 63.7810:</b> Secondary emissions that exit any opening in the BOPF shop or any other building housing the BOPF or BOPF shop operation shall not be discharged to the atmosphere that exhibit opacity greater than 20% (3-minute average), except during periods of startup, shutdown, and malfunction as defined in 40 CFR §63.2. |
| <b>45CSR§7-4.10.d.:</b> PM emissions from the stack of the main (primary) air pollution control equipment of a basic oxygen process, including emissions from fuel firing in an integral waste heat boiler, shall not exceed 0.11 lbs/ton of steel produced.                               | <b>40CFR§§63.7790(a) &amp; 63.7810:</b> Gases shall not be discharged to the atmosphere that exit from a primary emission control system for a BOPF with an open hood system that contain, on a flow-weighted basis, PM in excess of 0.02 gr/dscf during the steel production cycle for an existing BOPF shop.   |

|   |   |
|---|---|
| <p><b>45CSR§7-4.10.e.:</b> PM emissions from basic oxygen process secondary air pollution control equipment shall not exceed a concentration of 0.020 gr/dscf. The air pollution control device shall capture and control emissions from hot metal and scrap charging, tapping, turndown, slagging and as required to control slopping emissions.</p> | <p><b>40CFR§§63.7790(a) and 63.7810:</b> Gases shall not be discharged from a control device used solely for the collection of secondary emissions from the BOPF that contain PM in excess of 0.01 gr/dscf for an existing BOPF shop.</p> |
|---|---|

The visible emissions requirements were not streamlined and both conditions were included in the Title V permit, therefore the roof monitors and BOPF shop building openings must not exceed 20% opacity except during periods of startup, shutdown, and malfunction, and during those periods the opacity must not exceed 40% average opacity for more than 3 minutes in any 60 minute period. The PM standard for a primary air pollution control device from Rule 7 is 0.11 lbs/ton of steel produced, or 53.57 pph. The MACT PM standard for a primary air pollution control device for an open hood system is 0.02 gr/dscf. Both conditions were included in the Title V Permit. The PM concentration standard for a secondary air pollution control device from 40CFR§§63.7790(a) is more stringent than the PM concentration standard from 45CSR§7-4.10.e., therefore the Rule 7 limit was streamlined with the limit from the MACT. The PM concentration standard for hot metal transfer from 45CSR§7-4.10.g. is applicable to the the Hot Metal Transfer baghouse stack, S932. The PM testing requirements shall be in accordance with 45CSR7A which is more stringent than the testing requirements from the MACT. The compliance, monitoring, recordkeeping, reporting, and other testing requirements shall be in accordance with 40 CFR part 63, Subpart FFFFF. The basic oxygen plant is exempt from 45CSR10 in accordance with Section 4.1.e.

Permit R13-0987 authorized the construction of two desulfurization and slag skimming stations with hoods venting to a baghouse. The Rule 13 permit also authorizes a PM concentration standard, a PM limit, collection hood capture efficiencies standard, and a throughput limit. Compliance is to be demonstrated through testing and recordkeeping requirements, which were deemed to be sufficient for Title V purposes.

Permit R13-1200 authorized the construction of a slag granulation plant for Blast Furnace No. 1. The Rule 13 permit also authorizes slag processing throughput limits and emission limits on PM, SO<sub>2</sub>, CO and H<sub>2</sub>S. Compliance is to be demonstrated through recordkeeping and reporting. The throughput limit is equal to the maximum processing rate and the emissions limits are listed in the NSR permit for inventory purposes. Therefore, the compliance demonstration method was deemed to be sufficient for Title V purposes.

Permit R13-1433 authorized the installation of the Continuous Argon Stirring - Oxygen Blown (CAS-OB) Ladle Metallurgy facility and baghouse. The Rule 13 permit also authorizes the PM and CO emission limits and required throughput limits and stack testing to demonstrate compliance with the permitted emission rates. Recordkeeping requirements were added to the Title V Permit to demonstrate compliance with the throughput limits. After the installation of the CAS-OB baghouse, the permittee had difficulty with baghouse fires. The permittee petitioned the DAQ for permission to re-route the CAS-OB exhaust to a different baghouse. It was determined that no permit would be needed for the intended change. The permittee subsequently re-routed the exhaust from the CAS-OB system to the BOP Desulfurization Baghouse. The original CAS-OB system baghouse is no longer in service.

Consent Order CO-SIP-C-2003-28 requires the BOP Waste Heat Boiler to be pre-heated using steam sparging and limits the fuel fired at the Waste Heat Boiler to Natural Gas, Mixed Gas or steel making process gas. The Consent Order required the Company to record the amount of natural gas, blast furnace gas, and mixed gas combusted in the BOP Waste Heat Boiler. These conditions were deemed to be sufficient MRR for Title V purposes.

**Continuous Caster** - The Continuous Caster, Caster Cut-off Torches, and Caster Ladle Dryers are subject to 45CSR7. The Title V Permit application indicates the potential emissions from these sources at maximum capacity to be 10.4 pph each, much less than the 95.24 pph each allowed by Rule 7, therefore the facility shall monitor PM emissions by conducting visible emissions checks in accordance with Method 22. Associated recordkeeping was also included in the Permit.

**40 CFR part 60, subpart Na** - The slag skimming stations were constructed in 1988 and are therefore subject to the provisions of 40 CFR part 60, subpart Na in accordance with 40 C.F.R. § 60.140a (a) and (b). The opacity and PM concentration limits apply to the slag skimming station baghouse exit. The initial tests have not been conducted, therefore the requirements for initial tests were included in the Title V Permit. The requirement in 40 C.F.R. § 60.144a (b)(2) to obtain a total sample volume of at least 200 dscf for each run is not practical for this equipment, therefore the standard was revised to simply require the use of Method 5.

**40 CFR part 63, subpart FFFFF** - The blast furnaces and casthouses, and basic oxygen process and ancillary operations are subject to 40 C.F.R. § 63, Subpart FFFFF and must comply with each emission limitation and operation and maintenance requirement that applies no later than May 22, 2006. However, the permittee has requested, and been granted, a one-year extension in accordance with 40 CFR 63(i)(4)(i)(A). The approval is subject to the conditions listed in the approval letter and attached to the permit as Appendix B.

**40 CFR part 63 subpart ZZZZ** - The emergency generator is subject to the Reciprocating Internal Combustion Engine MACT, however in accordance with 40 CFR § 63.6590(b)(3) there are no applicable requirements.

### Non-Applicability Determinations

The following requirements have been determined not to be applicable to the subject facility due to the following:

**Permit R13-0987, Condition (A)(5)** - the requirement that the dual station desulfurization unit replace the existing desulfurization unit has been completed. Therefore, this condition was not included in the Title V permit.

**CO 3-1977** - required addition of equipment to the coke oven gas desulfurization at the Mainland Coke Facility which has been shut down.

**CO 6-1978** - required stack testing and additional fan capacity which has been completed. CO 6-1978 2 and CO 6-1978 3 required installation of charging controls at the mainland coke plant which has been shut down.

**CO 7-1987** - required installation of fume suppression systems on the blast furnace cast houses, which has been completed. In addition, Condition III.6.E. allows the termination of Paragraph III.6., which required dust control measures on plant roads and parking lots, upon the demonstration of compliance of the blooming mill scarfer as provided in Paragraph III.5.A. Although the blooming mill scarfer has been shut down, the controls were installed in accordance with the consent order, therefore Paragraph III.6.E was not included in the Title V permit.

**CO 2-1989 and CO 12-1990** - required the permanent closure of the Brown's Island and Mainland Coke Oven Batteries which has been completed. The Consent Orders also required the use of desulfurized coke oven gas from the Struthers Coke Oven Battery, which was never constructed.

**CO-SIP-95-2** - authorized SO<sub>2</sub> emission limits on the slag granulator and Basic Oxygen Process waste heat boilers and was entered into the SIP. It was determined that more stringent requirements were necessary, therefore CO-SIP-C-2003-28 was developed. In accordance with Section II.5. of CO-SIP-C-2003-28, the requirements from the January 1995 Consent Order were not included in the Title V Permit.

**Civil Consent Decree 5-96-CV-171** - has been terminated in accordance with Section XXXVIII.B. The permittee has certified completion and compliance with all requirements.

**40 CFR part 60, subparts K, Ka, and Kb** - The storage tanks associated with the Hot Side of the facility are not subject to these subparts.

**40 CFR part 60 subpart N** - The Basic Oxygen Process was constructed in 1967, before the subpart N applicability date of June 11, 1973.

**40 CFR part 63 subpart N** - NESHAP for Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks. Continuous chromium electroplating of steel is different from the chromium electroplating operations regulated in the existing NESHAP standard. Therefore, chromium electroplating operations at Mittal Steel USA - Weirton Inc. are not applicable to 40 CFR 63 Subpart N.

**40 CFR 63 Subpart Q** - NESHAP for Industrial Process Cooling Towers. No chromium-based water treatment chemicals are used at the facility.

**40 CFR 63 Subpart T** - National Emissions Standards for Halogenated Solvent Cleaning. No halogenated solvent cleaning machines exist at the facility.

**40 CFR 63 Subpart FFFFF** - The facility does not operate a sinter plant, therefore the requirements from this MACT for sinter operations were not included in the Title V permit.

### **Request for Variances or Alternatives**

None.

### **Insignificant Activities**

Insignificant emission unit(s) and activities are identified in the Title V application.

### **Comment Period**

Beginning Date: November 14, 2006

Ending Date: December 14, 2006

All written comments should be addressed to the following individual and office:

Bobbie Scroggie  
Title V Permit Writer  
West Virginia Department of Environmental Protection  
Division of Air Quality  
601 57th Street SE  
Charleston, WV 25304

### **Procedure for Requesting Public Hearing**

During the public comment period, any interested person may submit written comments on the draft permit and may request a public hearing, if no public hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. The Secretary shall grant such a request for a hearing if he/she concludes that a public hearing is appropriate. Any public hearing shall be held in the general area in which the facility is located.

### **Point of Contact**

Bobbie Scroggie  
West Virginia Department of Environmental Protection  
Division of Air Quality  
601 57th Street SE  
Charleston, WV 25304  
Phone: 304/926-0499 ext. 1225 • Fax: 304/926-0478

### **Response to Comments**

EPA Comments: Paragraph 5.2.3. was added to the permit to require the permittee to demonstrate compliance with the Rule 10 limit as set forth in the approved monitoring plan.

Section 5.2.1. of the Permit was revised to state the visible emissions tests will be used to demonstrate compliance with Sections 5.1.1., 5.1.2., and 5.1.3. of the permit.

Section 7.2.1. of the permit was revised. It now states the visible emissions tests will be used to demonstrate compliance with Sections 7.1.1., and 7.1.2. of the permit.